CleanUp 2011

6th International Workshop on Chemical Bioavailability in the Terrestrial Environment

Breakout discussion sessions

Thursday 8 September 2011

Discussion sessions

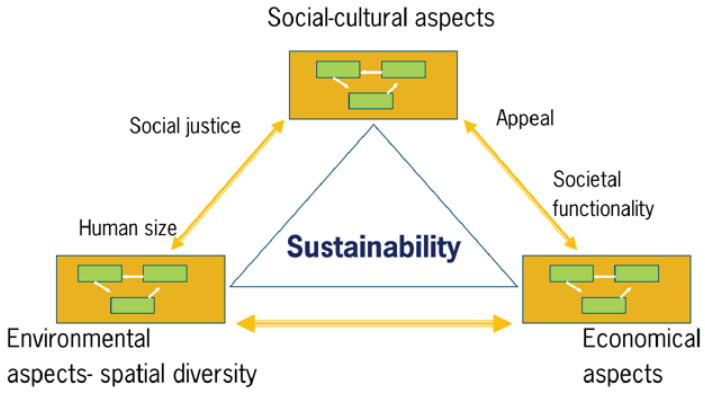
The 6th International Workshop on Chemical Bioavailability in the Terrestrial Environment incorporates two discussion sessions.

In these break-out sessions we want to connect the State of Science and Technology with the state of current practice and policy implementation, in order to define the steps necessary to come to a real implementation of bioavailability.
We will concentrate on the things participants of this workshop can do, and not on the things others should do.

In the discussion we will play our own role, but we also have to consider the way other people think. People who make decisions are not necessarily reading scientific papers, and may make their decisions based on journals, television, public opinion, internet browsing and, sometimes, a popular summary of scientific work.

Risk-based land management or corrective action has been widely recognised as a cost-effective approach to managing contaminated sites (the underlying basis to this being bioavailability), and yet there is no country in the world where bioavailability has been implemented as part of the legislation.

While a risk-based approach is the preferred strategy in many countries, there has been a real push towards green and sustainable remediation. This approach is a level 'above' risk-based methodologies, in that it includes environmental factors and the three pillars of sustainability (see diagram below).



Green and sustainable remediation are overlapping concepts. Sustainable practices are those that consider economic and natural resources, ecology, human health and safety, and quality of life.

Although the terms 'green' and 'sustainable' are sometimes used interchangeably, *green remediation* can be considered as having a focus on environmental factors, whereas *green and sustainable remediation* (GSR) features of a more holistic view and considers not only environmental factors, but social responsibility (e.g. minimising risk to surrounding communities) aspects as well (NAVFAC 2011).

Within the concepts of sustainability, bioavailability can play an important role. However, it is important to understand the role of bioavailability related to the environment, economy, and social and cultural aspects. Traditionally, we consider the following steps in the remediation of a contaminated site:

- Site investigation. What should be measured?
- Assessment (both human and ecological)
- Making plans for remediation
- Implementation of the remediation

In this approach, the most important role of bioavailability is in the definition of risks and defining possibilities of remediation (e.g. biodegradation, immobilisation). In green and sustainable remediation, more factors are becoming important and the connection of bioavailability with these factors have to be understood.

As part of our discussions, we will start with a combination of the latter two items and end up with 'What should be measured?'

Questions to be considered include:

A. What kinds of remediation become possible using the concept of bioavailability?
   What is the effect on environment, economy and social and cultural aspects?
   Are there contradictions?
B. Is bioavailability able to improve the assessment, both in quality and in costs?
   Which data and models do we need for assessment?
   Do we understand the models and are they explainable?
C. Are we able to measure the input data?
   Is measurement economically feasible?

In the afternoon part of the session, we will define the steps that should be made in order to give bioavailability its proper role in practice and policy.